

## Two New Species of *Leptocera* Olivier from Hawaii<sup>1</sup> (Diptera: Sphaeroceridae)

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The following descriptions of two new species of *Leptocera* Olivier were taken from a thesis on Hawaiian Sphaeroceridae which the author submitted to the Graduate School, University of Hawaii, in partial fulfillment of the M.S. degree in Entomology.

A more comprehensive treatment of the Hawaiian Sphaeroceridae will be published later.

GENUS *LEPTOCERA* OLIVIER, 1813.

SUBGENUS *LIMOSINA* MACQUART, 1835.

### 1. *Leptocera* (*Limosina*) ***brevivenosa*** new species (Fig. 1a-h).

This species is close to *Leptocera* (*Limosina*) *bifrons* (Stehn.), but differing in that the second costal sector is about a third the length of the third sector,  $R_{2+3}$  about a third the length of  $R_{4+5}$ ; male with basal half of middle femur and apical half of middle tibia with comb-like ventral bristles.

Male. *Head*: Frons shining with the anterior margin and area between the interfrontal and orbital bristles yellow to reddish brown. Face yellow to reddish brown, convex between the antennae, and protruding in front of the eyes in profile. One pair of moderately long vibrissa bristles; two shorter jowlar bristles directed anterodorsally a short distance behind the vibrissa, the anterior one longer. Eyes emarginate behind the antennae. First segment of antenna (Fig. 1h) with a relatively long bristle directed anteroventrally, arista long pubescent and about four times as long as the third segment; third segment dark brown and short pubescent. *Thorax*: Humeral callus with one bristle directed posteriorly. Two pairs of dorsocentral bristles, the anterior pair situated slightly in front of the suture. Disc of scutellum bare, margin with two apical and two lateral bristles, the lateral bristles about half as long as the apicals, and about as long as the posterior pair of dorsocentral bristles. Sternopleura with a strong bristle, about as long as the humeral, and a minute one in front of it. Front femur (Fig. 1f) with a row of four to five posteroventral bristles towards the apex. Middle femur (Fig. 1e) ventrally with comb-like bristles on the basal half, middle tibia (Fig. 1e) also with comb-like ventral bristles on the apical half, ventral apical bristle of middle tibia not as well developed as in the female. Middle tibia dorsally with a pair of moderately long bristles at basal third and another pair at apical

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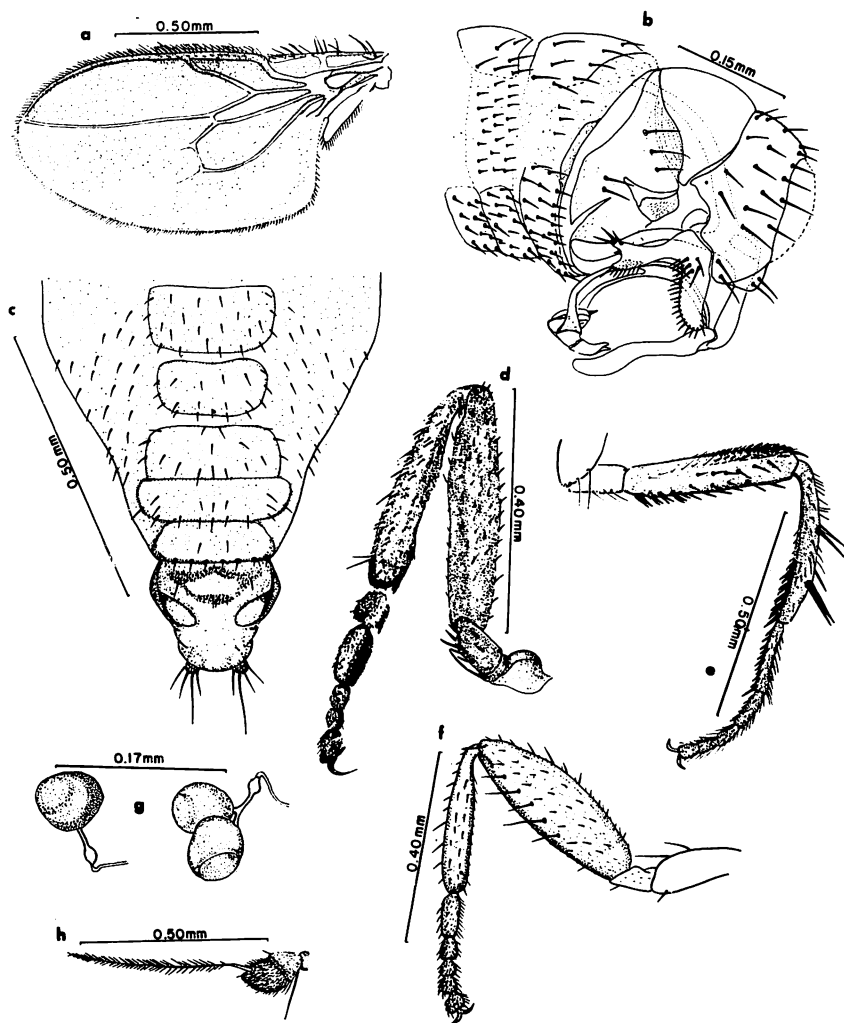


Fig. 1. *Leptocera (Limosina) brevivenosa* new species. a. left wing, b. male genitalia, c. female abdomen, d. male hind leg, e. male middle leg, f. male front leg, g. spermathecae, h. antenna.

third, the posterior pair slightly longer than the anterior. Wings fumose (Fig. 1a). Second costal sector about a third, or less than a third the length of third sector.  $R_{2+3}$  strongly bent forward and sinuate, about a third or less than a third the length of  $R_{4+5}$ . Abdomen dark brown to black, always darker than the thorax. Genitalia as in Fig. 1b. Body and wings are about equal in length, 1.4 mm, body slightly longer.

Female. Similar to male except for sexual differences. Middle tibia and middle femur lacking ventral comb-like bristles. Apical ventral bristles

on middle tibia, however, are more developed than in the male.

Holotype male and allotype female: Mt. Tantalus, Oahu, November, 1953 (D.E. Hardy). Paratypes, 60 males and 57 females, from the following localities: same data as type; Pupukea, Oahu, December, 1952 (D.E. Hardy); Pupukea Trail, Oahu, June, 1963 (D.E. Hardy); Kamananui Gulch, Oahu, 28 July, 1945; U.H. fields (on ginger root), Oahu, 2 January, 1938 (C.A. Brown); Manoa Valley, Oahu, February, 1952 (D.E. Hardy); Halawa Ridge, Oahu, November, 1952 (D.E. Hardy); Halawa Trail, Oahu, 10 December, 1952 (C.P. Hoyt); Halawa, Oahu, 17 December, 1922 (O.H. Swezey); Kalihi Valley, Oahu, September, 1953 (A. Suehiro); Kuliouou, Oahu, 7 February, 1953 (C.P. Hoyt); Castle Trail, Oahu, 14 October, 1934 (E.H. Bryan, Jr.); Waialae Iki, Oahu, 20 January, 1924 (E.H. Bryan, Jr.); Pohakea Pass, Oahu, April, 1959 (D.E. Hardy); Wahiawa swamp, Oahu, 27 December, 1965 (D.E. Hardy); Kaau Crater, Oahu, 29 November, 1964 (K. Frogner); Nuuanu Pali (in litter along roadside), Oahu, 27 January, 1967 (J.A. Tenorio); Keanae, Maui, July, 1953 (D.E. Hardy); N. of Keaau Orchard, N. Olaa, Hawaii, November, 1956 (R. Namba); Waipio Valley, Hawaii, August, 1952 (W.C. Mitchell); Kohala Ditch Trail, Hawaii; Bishop Trust Road, Hualalai, Hawaii, 14 July, 1965 (D.E. Hardy).

Type, allotype, and some paratypes to be deposited in the B.P. Bishop Museum. B.M. #7611.

#### SUBGENUS TRACHYOPELLA DUDA, 1913.

### 2. *Leptocera* (*Trachyopella*) *hardyi* new species (Fig. 2a-d; 3a-c, e, g).

This species resembles closely *L. obliqua* Richards from Micronesia.

The most apparent differences are found on the thorax, wings, and genitalia. In *L. obliqua*, the thorax bears three or more irregular rows of acrostichals between the posterior pair of dorsocentral bristles, and vein  $R_{2+3}$  is removed from the costa but runs almost parallel to it and then bends forward at the apex. In the new species, there are only two rows of acrostichals between the posterior pair of dorsocentral bristles, and  $R_{2+3}$  is arched and running very close to the costa, approaching it gradually.

Male. *Head*: Frons dark brown to black, three pairs of interfrontal bristles, two pairs of fairly long ocellars, one fairly long and two to three short bristles between the orbitals and interfrontals. Face protruding in front of the eyes between the antennae, sinuate in profile. One pair of incurved vibrissa bristles, jowlar bristles minute. Antennae widely separated, distance between them about the length of one antenna; arista relatively long pubescent, about five times as long as third segment; second segment black, slightly shorter than third. *Thorax* (Fig. 3e): Humeral callus with one moderately long backwardly directed and two short inwardly directed bristles. One pair of dorsocentrals equal to about three-fourths

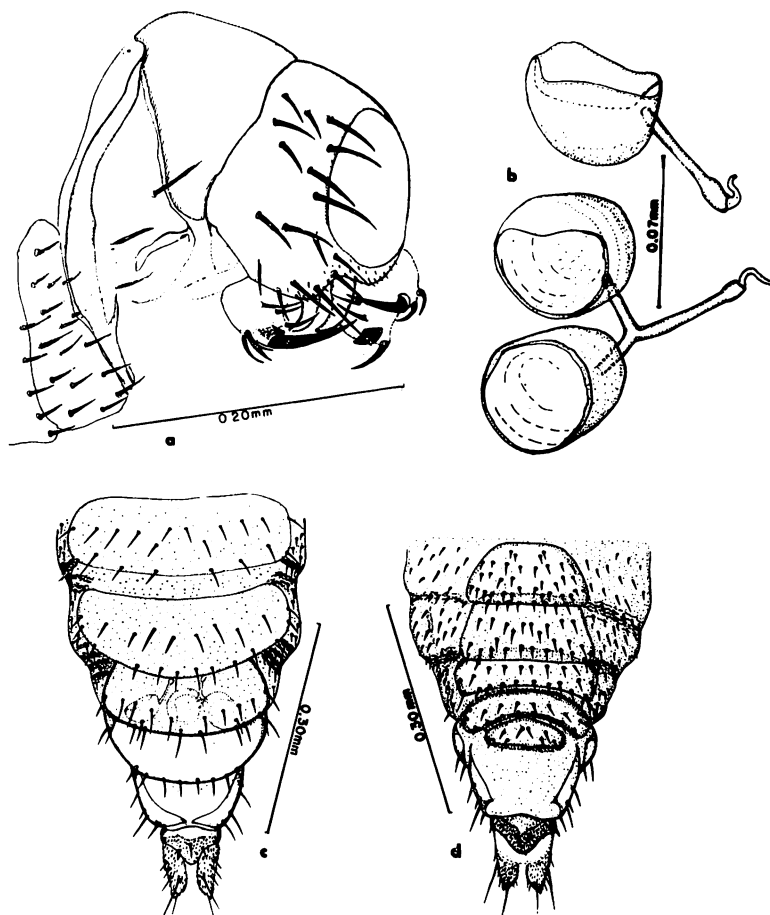


Fig. 2. *Leptocera (Trachyopella) hardyi* new species. a. male genitalia, b. spermathecae, c. female abdomen dorsal view, d. same ventral view.

the length of the anterior pair of marginal scutellar bristles. Two rows of acrostichals between the two dorsocentrals. Sternopleura with a short, weak bristle. Middle tibia (Fig. 3c) dorsally with two bristles at about basal third and three at about apical third, the middle one closer to the apex; ventrally with a short bristle near the middle. Hind tibia (Fig. 3a) with a preapical dorsal bristle, sometimes paired. Wing (Fig. 3b) with the second costal sector shorter than the third.  $R_{2+3}$  arched and running very close to the costa, approaching it gradually, not curved forward at the apex. Cell  $R_2$  extremely narrowed and tapered apically. Abdomen predominantly black. Genitalia as in Fig. 2a. Body length about 1.2 mm, wing about equal.

Female. Matching description of male, except for sexual characters.

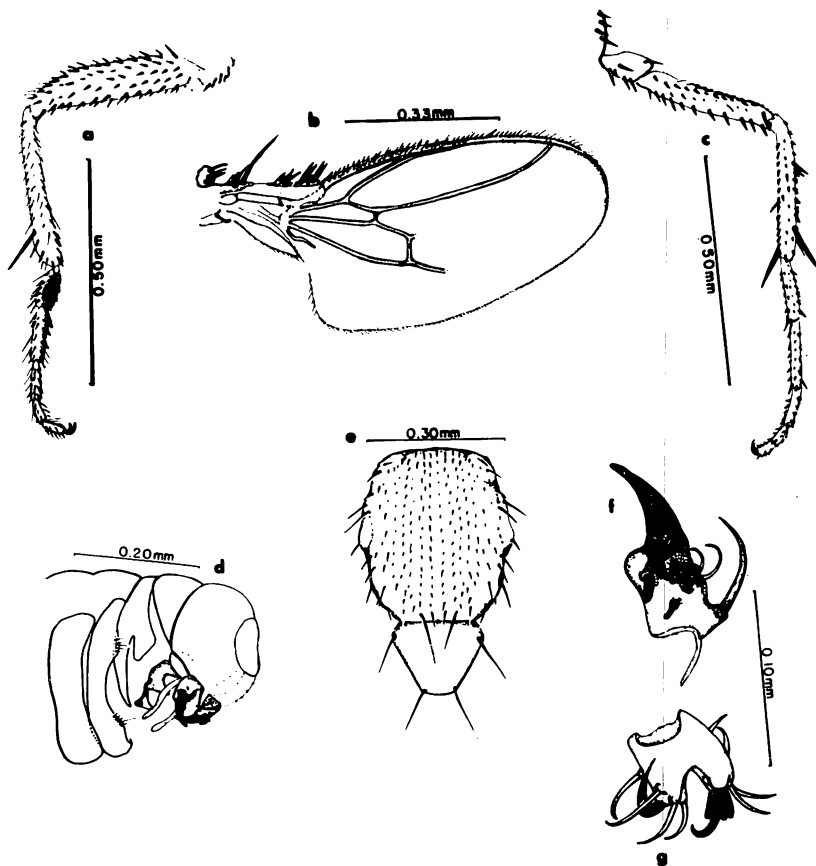


Fig. 3. *Leptocera* (*Trachypella*) *hardyi* new species (a-c, e, g), *Leptocera* (*Trachypella*) *obliqua* Richards (d, f). a. male hind leg, b. right wing, c. male middle leg, d. male genitalia, e. thorax dorsal view, f. right clasper of male, g. right clasper of male.

Abdomen Fig. 2c-d, spermathecae Fig. 2b.

Holotype male and allotype female: Lanaihale, Lanai, 4 January, 1962 (D.E. Hardy). Paratypes, six males and seven females, from the following localities: same data as type; Kamuela (on grass), Hawaii, 27 June, 1963 (D.E. Hardy); Lanaihale, Lanai, 25 March, 1966 (J.W. Beardsley, Jr.). Male and female from Kamuela, Hawaii with the basal and anterior portion of the wing tinged with brown.

Type, allotype, and some paratypes to be deposited in the B.P. Bishop Museum. B.M. #7612.